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UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WASHINGTON

CITY OF SPOKANE, a municipal corporation, located in the County of Spokane, State of Washington,

Plaintiff,

v.

MONSANTO COMPANY, SOLUTIA INC., and PHARMACIA CORPORATION, and DOES 1 - 100,

Defendants.

CASE NO. 15-cv-00201-SMJ

Judge Hon. Salvador Mendoza Jr.

DEFENDANTS' *DAUBERT* MOTION TO EXCLUDE THE EXPERT TESTIMONY OF LISA RODENBURG

Hearing March 12, 2020 at 8:30 a.m.
Richland
With Oral Argument

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I. INTRODUCTION

Monsanto challenges the admission of opinions from Plaintiff's expert, Lisa A. Rodenburg, Ph.D. ("Rodenburg"), based on her sworn testimony, admissions under oath, and prior statements made in academic settings. Rodenburg is one of Plaintiff's experts on the issue of PCB product identification. *See* Rodenburg Report, attached as Ex. A of Miller Decl. Rodenburg purports to be able to demonstrate, statistically, that a high percentage of PCBs found in the Spokane River were manufactured by Monsanto ("Aroclors") as opposed to those created by other manufacturers and inadvertent, or "byproduct" PCBs—*i.e.*, those which are unintentionally created through 100s of manufacturing processes involving heat, carbon and chlorine, or by simple combustion/incineration. *Id.* at 2; *see also* Spokane Deposition, at 43:6-14, Ex. B of Miller Decl.; *Id.* at 51:4-6, 57:12-58:25, 61:4-63:25; San Diego Deposition, at 18:21-19:11, Ex. C of Miller Decl.[1]

Rodenburg concedes that she cannot differentiate between foreign made PCBs and PCBs made domestically by Monsanto (Ex. B at 81:8-14, 82:4-8, 87:22-88:12) and that byproduct PCBs are found in numerous consumer products at concentrations of up to 2,000 ppm—11,764,705,882.35 times greater than the 170 ppq water quality standard for the State of Washington under WAC 173-201A-240. *Id.* at 16:10-18:20; Ex. C at 28:6-34:4, 55:15-56:5. Rodenburg also concedes that, of the 209 individual PCB compounds (called "congeners"), at least 128 may be produced unintentionally through manufacturing processes. Ex. C at 54:14-24.

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[1] Rodenburg adopted in this case her San Diego deposition testimony regarding byproduct PCBs. Ex. B at 13:2-18:20.

Before being hired as a litigation expert in this case, Rodenburg reported at an academic seminar that byproduct PCBs were the "main problem" facing the Spokane River. Ex. B at 72:17-73:17. It is therefore astonishing that, in this case, she has employed various statistical sleights of hand to reach the direct opposite opinion. As will be demonstrated, Rodenburg did this by rigging statistical analyses to ensure that she arrived at the conclusion she was hired to reach—that Aroclors are the "main sources" of PCBs in the Spokane River. Ex. A at 2.

II. LEGAL STANDARD

Rule 702's gatekeeping authority vested in courts ensures an expert's testimony "rests on a reliable foundation." *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579, 597 (1993). A district court must first determine "nothing less than whether the experts' testimony reflects scientific knowledge, whether their findings are derived by the scientific method, and whether their work product amounts to good science." *Daubert II*, 43 F.3d at 1315.

Daubert "demands a searching inquiry as to method." *United States v. Webb*, 115 F.3d 711, 716 (9th Cir. 1997). "[A]ny step that renders the analysis unreliable . . . renders the expert's testimony inadmissible." *Goebel v. Denver & Rio Grande Western R.R.*, 346 F.3d 987, 992 (10th Cir. 2003) (citations and internal quotations omitted). Testimony that requires "too great an analytical gap between the data and the opinion offered" is impermissible. *General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997). When considering the reliability of expert testimony, a trial court should evaluate whether "the theory or technique employed by the expert" is (1) "generally accepted in the scientific community," (2) has been "subjected to peer review and publication," (3) "it can be and has been tested," and

(4) "the known or potential rate of error is acceptable." *Daubert II*, 43 F.3d at 1316-17 (citing *Daubert*, 509 U.S. at 593-595).

III. ARGUMENT

A. The Data Underlying Rodenburg's Opinions are Unreliable

Rodenburg cannot vouch for the representativeness of the sampling data that she reviewed, much of which was selected by Plaintiff's counsel. Ex. A at 4. She did not choose the number, location, or time at which sampling occurred, nor did she independently design a sampling program to represent the Spokane River as a whole. Ex. B, at 101:21-102:9. As a result, Rodenburg does not know whether the data are representative of the Spokane River, or instead, merely represent the condition of specific sites when and where the data were collected. *Id.* at 103:19-104:3. Rodenburg's inability to vouch for the representativeness of the data she reviewed renders her opinions unreliable. *See* Fed. R. Evid. 702(c) (expert testimony must be based on "sufficient facts or data"); *Waskowski v. State Farm Mut. Auto. Ins. Co.*, 970 F. Supp. 2d 714, 723 (E.D. Mich. 2013) (excluding opinions which are not "based on sufficient facts or data" where damages expert failed to consider data representative of damages at issue, and based estimates on representations made by plaintiff's counsel).

Additionally, Rodenburg did not make any effort to confirm that the data she reviewed had been subjected to appropriate QA/QC and blank correction[2] by the

[2] Rodenburg was unable to identify which methods of blank correction, if any, were adhered to for any of the environmental compartments from which sampling

sampling laboratories. Instead, Rodenburg "assume[d] that the data [was] valid" because it was downloaded from a Washington State database. Ex. B at 91:20-92:18, 95:7-96:17. Without appropriate QA/QC, it is impossible to determine whether data is valid. *Id.* at 95:23-96:4. Without appropriate blank correction, it is impossible to determine whether PCBs identified in sampling data were derived from lab or field contamination, which Rodenburg has described as a "significant problem" for the Spokane River, where PCB concentrations are "fairly low". *Id.* at 173:17-175:2. Because Rodenburg did not ensure that appropriate QA/QC and blank correction measures were followed, Plaintiff has failed to establish that the data her opinions rely upon is reliable. *Tressler v. BNSF Ry. Co.*, No. CV-10-188-RMP, 2012 WL 315402, at *2 (E.D. Wash. Feb. 1, 2012) (a party must "point to some objective source . . . to show that [an expert] has followed the scientific method") (citing *Daubert II*, 43 F.3d at 1318-19).

Rodenburg also relied on data that were "flagged" by the sampling laboratories as unreliable. Data containing a "B" flag means that an associated blank has also detected the presence of PCBs, and must therefore be blank corrected. Ex. B at 265:11-19; 269:15-24. Data containing an "N" flag signifies non-detection within the sample. *Id.* at 271:11-17. Rodenburg, however, did not perform any blank correction on "B" flagged data, and, contrary to laboratory protocol, reported the presence of PCBs in data containing both "B" and "N" flags. *Id.* at 265:15-19, 267:8-272:24. Reliance upon data that laboratories have flagged

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data were collected other than surface water and one groundwater compartment. Ex. B at 186:20-187:5.

as unreliable renders all of Rodenburg's opinions inadmissible.

Rodenburg concedes that she also failed to accurately input raw data, causing the digit to the left of a decimal point (reporting concentrations of byproduct PCBs) to become zero. *Id.* at 275:16-19 ("Q. So you essentially lopped off the first digit; correct? A. Well, let me – I don't know how that happened."). As a result, Rodenburg misreported and diminished the concentration of byproduct PCBs by a factor of 16 for certain data. *Id.* at 276:9-277:14.

Finally, Rodenburg reported the presence of certain Aroclor PCBs in at least 31 samples for which her analyses returned negative coefficients—signifying that *no* such Aroclors were present. *Id.* at 189:18-190:22, 191:10-227:19. By reporting the presence of Aroclors when her analyses generated negative coefficients, Rodenburg admittedly failed to engage in "sound science". *Id.* at 227:20-228:2:

> Q. In your opinion, is it sound science to report the presence of Aroclors when an MLR analysis generates a negative coefficient?
> A. No.
> Q. Did you do that in this case?
> A. Yes.

Because the data underlying her opinions are unreliable, and Rodenburg admittedly failed to engage in "sound science", her opinions should be excluded from trial. *Daubert II*, 43 F.3d at 1317-18; *see also Goebel*, 346 F.3d at 992.

B. The Methodology Rodenburg Employed is Unreliable

In forming her opinions, Rodenburg used two statistical tools—Positive Matrix Factorization ("PMF") and Multiple Linear Regression ("MLR")—but rigged them to ensure that sampling data would look like Aroclor, rather than byproduct PCBs. Ex. A at 4. Rodenburg achieved this through various data

manipulations which are discussed in turn below.

First, Rodenburg compared sampling data only to Aroclor PCB patterns or "fingerprints." Ex. A at 8; Ex. B at 127:24-130:7, 187:7-188:11 (Rodenburg's PMF and MLR analyses generated "factors" that she then numerically compared to fingerprints of Aroclors 1016, 1242, 1248, 1254 and 1260.) Rodenburg did not numerically determine the extent to which sampling data resembled byproduct PCBs, despite admitting that she could have done so. *Id.* at 130:14-131:13. As a result, Rodenburg's analyses were designed to ensure that all sampling data would resemble Aroclors; she did not even *consider* the extent to which sampling data numerically resembled byproduct PCBs. *Id.* at 133:11-14 ("Q. The only thing you numerically compared the factors to were Aroclors; correct? A. Correct.").

Next, when a factor did not numerically match an Aroclor, Rodenburg "visually" compared that factor with "what [she] knew about . . . byproduct PCB[s]" to subjectively determine whether the sample more closely resembled an Aroclor or byproduct fingerprint. *Id.* at 128:21-130:18. However, the only byproduct congeners that Rodenburg "visually" considered were those found in pigments and silicones—primarily PCBs 11 and 209 (*id.* at 132:16-133:10; 172:22-173:16) despite admitting that more than 200 manufacturing processes (in addition to combustion/incineration) have been identified as generating byproduct PCBs, and 128 individual congeners have been identified as byproduct in nature. *Id.* at 43:6-14, 51:4-6, 132:16-23; *see also* Ex. C at 54:14-24. This undercounting of byproduct PCBs renders her analysis unreliable and inadmissible. Moreover, Rodenburg's "visual" comparison of factors to "what [she] knew" about byproduct PCBs is not a generally accepted methodology. Thus, Rodenburg's opinions are

not the product of reliable principals and methods, and should be excluded from trial. *Daubert II*, 43 F.3d at 1316-17.

Additionally, in order to quantitatively determine the extent to which sampling data resembled Aroclor fingerprints, Rodenburg employed numerical cutoffs (or "R^2 values") of her own creation which: (1) are scientifically arbitrary and indefensible; (2) have never been subjected to peer-review; and (3) are contradicted by authoritative literature that Rodenburg cites favorably. Ex. B at 135:12-136:2, 138:18-139:16, 140:25-142:2. According to Rodenburg, an R^2 value of 0 to 0.4 signifies that sampling data contained either a highly weathered Aroclor or an unknown constituent; 0.4 to 0.8 signifies a weathered Aroclor[3]; and 0.8 to 1.0 signifies an unweathered Aroclor. *Id.* at 134:9-18. These cutoffs, however, have never been published in any handbook, textbook or peer-reviewed article. *Id.* at 135:12-136:2. Instead, they were contrived by Rodenburg and have never been subjected to peer-review. Ex. A at 5; Ex. B at 139:12-16. Rodenburg concedes that she cannot scientifically disprove the use of R^2 cutoff values different than those she selected for her analyses. Ex. B at 138:18-139:6. Indeed, a published study that Rodenburg cites favorably used different R^2 values, requiring a value of 0.9 or greater to determine whether a sample contained PCBs, and rejecting an R^2 value of 0.725 as insufficient. *Id.* at 140:25-142:2; Ex. A, at 8.

Critically, had Rodenburg used an R^2 cutoff of 0.9 to signify the presence of Aroclor PCBs, none of the municipal product data (105 total samples) and only

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[3] Rodenburg posits that PCBs can become "weathered" over time, thus changing their chemical makeup. Ex. B at 146:16-24.

26% of the environmental sampling data (51 out of 195 samples) would have been deemed to acceptably resemble Aroclors under her MLR analyses. Ex. A at Table 3, p. 25-35; *Id.* at Table 4, p. 39-43. Similarly, none of the stormwater or fish tissue samples, and only one surface water and one waste water treatment plant sample, would have been deemed to resemble Aroclors under her PMF analyses. Ex. A at 16-20; Ex. B at 153:20-154:25, 155:6-9. Nevertheless, Rodenburg employed arbitrary R^2 cutoff values favorable to the conclusion she was hired to reach—that Aroclors are the "main sources" of PCBs in the Spokane River. Ex. A at 2.

Because her PMF and MLR analyses were rigged to ensure that sampling data would resemble Aroclor rather than byproduct PCBs, and are based on quantitative cutoffs that are arbitrary, scientifically indefensible, and have never been subjected to peer review, Rodenburg's opinions do not reflect "scientific knowledge" and should therefore be excluded from trial. *Whisnant v. United States*, No. C03-5121, 2006 WL 2861112, at *3 (W.D. Wash. Oct. 5, 2006), *aff'd*, 274 F. App'x 536 (9th Cir. 2008) ("[T]he party presenting the expert must show that the expert's findings are based on sound science, and this will require some objective, independent validation of the expert's methodology."); *Henricksen v. ConocoPhillips Co.*, 605 F. Supp. 2d 1142, 1153 (E.D. Wash. 2009) ("The court need not admit an expert opinion that is connected to the underlying data 'only by the ipse dixit of the expert.'") (quoting *Joiner*, 522 U.S. at 146).

Rodenburg also does not consistently interpret R^2 values using the 0-0.4, 0.4-0.8 and 0.8-1.0 cutoffs. For storm drain solid, stormwater, City of Spokane treated effluent, biofilm and river sediment sampling data, Rodenburg attempted to translate R^2 values to a percentage-weight of Aroclor PCBs. Ex. B at 239:21-

240:18, 241:4-18. That is, according to Rodenburg, "one way to interpret" an R^2 value of 0.5 is that 50% of the sampling data is comprised of Aroclor PCBs. *Id.* at 236:21-237:18. Rodenburg is unable to identify any peer-reviewed literature or text to support her theory that an R^2 value can be translated to a percentage-weight. *Id.* at 236:23-238:14. Thus, Rodenburg's opinions regarding percentage-weights of Aroclor PCBs are unreliable and should be excluded. *Tressler*, 2012 WL 315402, at *2; *see also Daubert II*, 43 F.3d at 1316-17.

Additionally, Rodenburg failed to consider significant alternative sources of PCBs when conducting her analyses. Despite the fact that foreign-manufactured PCBs are "virtually identical" to those historically manufactured by Monsanto (Ex. B at 84:20-85:7, 90:2-19) and at least 50% of the worldwide supply of commercial PCBs were made by third parties (*id.* at 82:4-8), Rodenburg failed to investigate the extent to which other manufacturers' PCBs were imported into the Spokane River watershed (*id.* at 90:21-91:2) and did not consider the extent to which atmospheric deposition of PCBs produced in Asia may have impacted PCB levels in the Spokane River. *Id.* at 91:3-7. Rodenburg also failed to analyze the extent to which the City's waste-to-energy incineration plant, which disposed of nearly 138,000 metric tons of garbage in 2015 (*id.* at 67:19-68:6), contributes to byproduct PCB loading in the Spokane River, despite admitting that PCBs are generated by combustion processes including waste incineration. *Id.* at 51:4-6, 57:12-61:22, 63:7-15.

In a similar vein, Rodenburg improperly assumed that Aroclors are the "main source" of PCBs in the effluent of the Inland Empire Paper ("IEP") facility, which, according to Rodenburg, "is to be expected given that Aroclor 1242 was

used in carbonless copy [NCR] paper." Ex. A at 38. Despite this bald assertion, Rodenburg was unable to identify *any* evidence that IEP ever manufactured or recycled NCR paper (Ex. B, at 254:2-5), and a report prepared on behalf of the Spokane River Regional Toxics Task Force states that PCBs in IEP's effluent "correlated with [byproduct] PCBs in pigments used on the paper products they recycle." *Id.* at 258:15-259:10. This is consistent with IEP's own analysis that its effluent was PCB free until it began recycling in 1991. *Id.* at 252:11-253:3, 257:8-24. Rodenburg's opinions regarding IEP's effluent are further undermined by two facts: (1) NCR paper has not been manufactured since 1971 (*id.* at 247:20-25); and (2) paper can only be recycled between 5 and 7 times. *Id.* at 248:6-14, 253:11-24. Nevertheless, Rodenburg disregarded the weight of evidence—and more logical explanation—that IEP's effluent contains byproduct PCBs from pigments on the paper it recycles, rather than Aroclors from NCR paper which has not been manufactured for 49 years and is almost certainly beyond its recyclable lifecycle.

Because she failed to consider obvious alternative PCB sources, and ignored "inconvenient" evidence when conducing her analyses, Rodenburg's opinions are unreliable, and should be excluded from trial. *Abarca v. Franklin Cty. Water Dist.*, 761 F. Supp. 2d 1007, 1066 at FN60 (E.D. Cal. 2011) ("[A] reliable expert would not ignore contrary data, misstate the findings of others, [or] make sweeping statements without support . . . ."); *Henricksen*, 605 F. Supp. 2d at 1162.

IV. CONCLUSION

For the foregoing reasons, Rodenburg's opinions do not meet the standard for expert opinions mandated by *Daubert* and should be excluded from trial under Rule 702.

Respectfully submitted this 28th day of January, 2020.

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CERTIFICATE OF SERVICE

I certify that on January 28, 2020 I caused the foregoing to be electronically filed with the clerk of the Court using the CM/ECF System which in turn automatically generated a Notice of Electronic Filing (NEF) to all parties in the case who are registered users of the CM/ECF system. The NEF for the foregoing specifically identifies recipients of electronic notice.

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